Amendments to the Claims:

Please cancel claims 1 to 101 and add new claims 119 to 190 as set forth hereinafter.

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1.) to 118.) (cancelled)

119.) (New) A method of constructing a pile foundation; the method comprising the steps of:

building on the ground (2) a foundation structure (1) having at least one through hole (4);

inserting a metal pile (3), comprising a rod (9) and at least one bottom main head (10), through said hole (4), so that the main head (10) of the pile (3) contacts the ground (2);

statically applying at least one thrust on the pile (3) to drive the pile (3) into the ground (2); and

fixing the driven pile (3) axially to the foundation structure (1);

the method being **characterized in that** the transverse dimensions of the main head (10) are greater than those of the hole (4) when driving the main head (10) into the ground.

120.) (New) A method as claimed in Claim 119, wherein the main head (10) is initially detached from the rod (9), and, when building the foundation structure (1), is

positioned contacting the ground (2) beneath the foundation structure (1) and substantially coaxial with the hole (4); the rod (9) engaging the main head (10) when the rod (9) is inserted through the hole (4).

121.) (New) A method as claimed in Claim 119, wherein the transverse dimension of the main head (10) is adjustable, and the main head is contracted to a transverse dimension smaller than that of the hole (4) for insertion through the hole (4), and is then expanded to a transverse dimension larger than that of the hole (4) on contacting the ground (2).

122.) (New) A method as claimed in Claim 121, wherein the transverse dimension of the main head (10) is adjusted by means of an actuator producing relative slide between at least two portions of the main head (10).

123.) (New) A method as claimed Claim 119, wherein at least one connecting member (5) is fixed to the foundation structure (1), adjacent to the hole (4); the static thrust on the pile (3) to drive the pile (3) into the ground (2) being applied using the foundation structure (1) as a reaction member.

124.) (New) A method as claimed in Claim 123, wherein appropriate ballast, resting on the foundation structure (1), is added to the foundation structure (1) at the hole (4).

125.) (New) A method as claimed in Claim 119, wherein drive ballast, physically separate from and not resting on the foundation structure (1), is provided; the static thrust on the pile (3) to drive the pile (3) into the ground (2) being applied using the drive ballast as a reaction member.

126.) (New) A method as claimed in Claim 125, wherein the drive ballast comprises a mass resting on the ground (2).

127.) (New) A method as claimed in Claim 126, wherein the mass of the drive

ballast is fixed temporarily to the ground (2) by means of a number of auxiliary piles or screws driven temporarily into the ground (2).

128.) (New) A method as claimed in Claim 126, wherein the mass of the drive ballast is mounted on a movable structure.

129.) (New) A method as claimed in Claim 119, wherein thrust is applied by means of a respective thrust device (21) comprising at least two hydraulic jacks located on opposite sides of the rod (9); the movable output member of each hydraulic jack is fixed to a fixed horizontal plate, and the bodies of the two hydraulic jacks grip the rod (9) to engage the rod (9) and draw the rod (9) downwards when the output members of the jacks are extracted from the bodies of the hydraulic jacks; and the bodies of the two hydraulic jacks grip the rod (9) by means of wedges, which tend to compress the rod (9) as the bodies of the hydraulic jacks descend.

130.) (New) A method as claimed in Claim 119, wherein the main head (10) comprises a connecting member (14) for engaging the rod (9) and fixing the rod (9) transversely to the main head (10); the rod (9) is defined by a cylindrical pipe having an inner conduit (11); the connecting member (14) is defined by a cylindrical member which engages a bottom portion of the inner conduit (11).

131.) (New) A method as claimed in Claim 119, wherein the rod (9) is defined by a cylindrical pipe having an inner conduit (11); once driving is completed, a substantially plastic first cement material (32) defined by concrete is fed into the inner conduit (11).

132.) (New) A method as claimed in Claim 119, wherein the main head (10), as it is being driven, forms in the ground (2) a main channel (28) of larger transverse dimensions than the rod (9); a substantially plastic second cement material (31) is fed into the portion (30) of the main channel (28) not occupied by the rod (9).

133.) (New) A method as claimed in Claim 132, wherein an injection conduit (16) is formed through the foundation structure (1), and has a first end (18) projecting from the foundation structure (1), and a second end (19) terminating on the ground (2) adjacent to the hole (4) and at the pertinent portion of the main channel (28); the second cement material (31) is pressure injected into the main channel (28) along the injection conduit (16).

134.) (New) A method as claimed in Claim 133, wherein, prior to driving the pile (3), any water beneath the foundation structure (1) is sucked out along the injection conduit (16).

135.) (New) A method as claimed in Claim 132, wherein the second cement material (31) is pressure injected by means of an injection conduit (50), which is defined by at least one pipe (51) having a bottom end located at least one through hole (52) in the rod (9).

136.) (New) A method as claimed in Claim 135, wherein the through hole (52) in the rod (9) is located close to the main head (10).

137.) (New) A method as claimed in Claim 135, wherein the second cement material (31) is pressure injected by means of the injection conduit (50) when driving the pile (3) in a number of non-simultaneous stages.

138.) (New) A method as claimed in Claims 135, wherein the second cement material (31) is pressure injected by means of the injection conduit (50) after the pile (3) is driven.

139.) (New) A method as claimed in Claim 135, wherein, prior to driving the pile (3), any water beneath the foundation structure (1) is sucked out along the injection conduit (50).

140.) (New) A method as claimed in Claim 132, wherein the hole (4) is fitted inside

with a sealing ring (15) which engages the outer cylindrical surface of the rod (9) when the rod (9) is inserted through the hole (4).

141.) (New) A method as claimed in Claim 132, wherein at least one additive is added to the second cement material (31) to reduce potential adhesion of the ground (2) to the second cement material (31).

142.) (New) A method as claimed in Claim 132, wherein at least one waterproofing additive is added to the second cement material (31) to make the second cement material (31) substantially impermeable to water even prior to curing.

143.) (New) A method as claimed in Claim 142, wherein, when working through a bed of moving water, the second cement material (31) is injected at a pressure higher than the pressure exerted by the moving water.

144.) (New) A method as claimed in Claim 119, wherein at least one connecting member (5) is fixed to the foundation structure (1), adjacent to the hole (4); the pile (3) being fixed axially to the foundation structure (1) by securing to the connecting member (5) a horizontal metal plate (33) placed on top of the pile (3) to engage a top end (22) of the pile (3).

145.) (New) A method as claimed in Claim 144, wherein a body of elastic material is interposed between the metal plate (33) and the top end (22) of the pile (3).

146.) (New) A method as claimed in Claim 119, wherein at least one connecting member (5) is fixed to the foundation structure (1), adjacent to the hole (4); the connecting member (5) being defined by a cylindrical metal lining pipe (5), which lines the hole (4), has a portion (7) projecting upwards from the foundation structure (1), and is fixed to the foundation structure (1).

147.) (New) A method as claimed in Claim 146, wherein the metal pipe (5) is fixed to

the foundation structure (1) by at least one metal ring (6) integral with the foundation structure (1).

148.) (New) A method as claimed in Claim 147, wherein the metal pipe (5) is fixed to the foundation structure (1) by at least two metal rings (6) integral with the foundation structure (1); an insulating sheath (48) is interposed between the foundation structure (1) and the ground (2); and the insulating sheath (48) is fixed, at the hole (4), to the metal pipe (5) by inserting the free edge of the insulating sheath (48) between the two rings (6), and inserting through the insulating sheath (48) a number of screws (49), each of which is bolted to the two rings (6).

149.) (New) A method as claimed in Claim 119, wherein the rod (9) is made of metal, and comprises a number of segments, which can be identical or of different shape and/or thickness, are driven successively through the respective said hole (4), and are joined to one another to define the rod (9).

150.) (New) A method as claimed in Claim 119, wherein the main head (10) comprises a substantially circular, flat plate (12) having a jagged outer edge (13).

151.) (New) A method as-claimed in Claim 119, wherein the pile (3) comprises at least one lead-in head (34) coaxial with and below the main head (10), which has a central opening (37); the lead-in head (34) comprising an elongated body (36), which extends upwards through the central opening (37) in the main head (10) and engages a bottom end (38) of the rod (9).

152.) (New) A method as claimed in Claim 151, wherein the main head (10) engages the rod (9) with the interposition of at least one portion (39) of the elongated body (36) of the lead-in head (34).

153.) (New) A method as claimed in Claim 152, wherein the rod (9) is defined by a

cylindrical pipe having an inner conduit (11); the elongated body (36) of the lead-in head (34) is defined by a cylindrical tubular body (36), which is inserted inside the inner conduit (11) and comprises a ring (39) connected integrally to an outer surface of the tubular body (36) and which engages the bottom end (38) of the rod (9) to secure the rod (9) axially to the tubular body (36); the main head (10) engages the rod (9) with the interposition of the ring (39).

154.) (New) A method as claimed in Claim 151, wherein the lead-in head (34), as it is being driven, forms in the ground (2) a lead-in channel (40) of transverse dimensions larger than those of an elongated body (36) connected to the lead-in head (34); a substantially plastic second cement material (31) is fed into the portion of the lead-in channel (40) not occupied by the elongated body (36) simultaneously with the driving of the pile (3).

155.) (New) A method as claimed in Claim 154, wherein the second cement material (31) is pressure injected along an injection conduit, which is defined by at least one pipe having a bottom end located at the lead-in head (34).

156.) (New) A method as claimed in Claim 155, wherein the elongated body (36) is a tubular body having an inner channel along which the pipe defining the injection conduit is located.

157.) (New) A method as claimed in Claim 151, wherein the lead-in head (34) is fixed to a respective elongated body (36) by means of a connecting mechanism allowing the lead-in head (34) to slide with respect to the elongated body (36).

158.) (New) A method as claimed in Claim 157, wherein the connecting mechanism is remote-controlled by an actuator.

159.) (New) A method as claimed in Claim 157, wherein the connecting mechanism

releases slide of the lead-in head (34) with respect to the elongated body (36), when the force exerted on the lead-in head (34) exceeds a given threshold value.

160.) (New) A method as claimed in Claim 151, wherein the pile (3) comprises a number of lead-in heads (34) located coaxially with and beneath the main head (10), and which form in the ground (2) a lead-in channel (40) defining a "lead-in" by which to drive the main head (10); the lead-in heads (34) increasing in transverse dimensions so as to gradually increase the transverse dimensions of the lead-in channel (40).

161.) (New) A method as claimed in Claim 151, wherein the bottom portion of at least the bottom lead-in head (34) is pointed.

162.) (New) A method as claimed in Claim 161, wherein the inclination of the pointed tip of the bottom lead-in head (34) is adjustable, when driving the pile (3), as a function of the characteristics of the ground (2).

163.) (New) A method as claimed in Claim 161, wherein the bottom lead-in head (34) is rotated at a given speed about its central axis of symmetry.

164.) (New) A method as claimed in Claim 163, wherein the bottom lead-in head (34) comprises a number of helical grooves to screw the bottom lead-in head (34) into the ground (2).

165.) (New) A method as claimed in Claim 151, wherein the transverse dimension of the lead-in head (34) is adjusted when driving the pile (3).

166.) (New) A method as claimed in Claim 165, wherein the transverse dimension of the lead-in head (34) is adjusted by means of an actuator producing relative slide between at least two portions of the lead-in head (34).

167.) (New) A method as claimed in Claim 119, wherein the main head (10) is pointed.

168.) (New) A method as claimed in Claim 167, wherein the inclination of the pointed tip of the main head (10) is adjustable, when driving the pile (3), as a function of the characteristics of the ground (2).

169.) (New) A method as claimed in Claim 168, wherein the inclination of the pointed tip of the main head (10) clicks between at least two distinct configurations, so as to adjust, when driving the pile (3), to the characteristics of the ground (2).

170.) (New) A method as claimed in Claim 167, wherein the main head (10) is rotated at a given speed about its central axis of symmetry.

171.) (New) A method as claimed in Claim 170, wherein the main head (10) comprises a number of helical grooves to screw the main head (10) into the ground (2).

172.) (New) A method as claimed in Claim 119, wherein a metal plate is placed about the hole (4), has a central hole corresponding with the hole (4), and is connected to the foundation structure (1) by means of a number of screws.

173.) (New) A method as claimed in Claim 119, wherein, prior to fixing the pile (3) axially to the foundation structure (1), the pile (3) is preloaded with a downward thrust of given intensity.

174.) (New) A method as claimed in Claim 119, wherein, when driving the pile (3), the rod (9) of the pile (3) is rotated about its vertical axis of symmetry.

175.) (New) A method as claimed in Claim 119, wherein, prior to driving the pile (3), a pre-channel (45) is formed coaxial with the main head (10).

176.) (New) A method as claimed in Claim 175, wherein the pre-channel (45) has a transverse dimension slightly larger than the transverse dimension of the main head (10), and the inner walls of the pre-channel (45) are lined with a sheet metal liner (48).

177.) (New) A method as claimed in Claim 175, wherein the pre-channel (45) is filled

with low-strength material (46).

178.) (New) A method as claimed in Claim 119, wherein the transverse dimension of the main head (10) is adjusted when driving the pile (3).

179.) (New) A method as claimed in Claim 178, wherein the transverse dimension of the main head (10) is adjusted by means of an actuator producing relative slide between at least two portions of the main head (10).

180.) (New) A method as claimed in Claim 178, wherein the main head (10), as it is being driven, forms in the ground (2) a main channel (28) of transverse dimensions larger than those of the rod (9); a substantially plastic second cement material (31) is fed into the portion (30) of the main channel (28) not occupied by the rod (9) simultaneously with the driving of the pile (3); the possibility of adjusting the transverse dimension of the main head (10), as the main head (10) is driven into the ground (2), is used to increase the transverse dimension of the main channel (28) at the end portion of the main channel (28), so as to form a bulb of relatively large transverse dimensions at the bottom end portion of the pile (3).

181.) (New) A method as claimed in Claim 180, wherein the transverse dimension of the end portion of the pile (3) is increased by drawing the main head (10) upwards to deform the end portion of the rod (9).

182.) (New) A method as claimed in Claim 119, wherein, prior to inserting the rod (9) inside the respective hole (4), an elongated member (53) is inserted inside the hole (4), so that the elongated member (53) faces a through slot (54) formed in the main head (10) and shaped and sized to permit passage of the elongated member (53); a plate (55), having a transverse dimension at least equal to that of the rod (9), is placed on top of the elongated member (53), and, when the rod (9) is inserted inside the hole (4), the bottom end of the

rod (9) resting on the top surface of the plate (55) to push the elongated member (53) down and bring the plate (55) into contact with the main head (10); as the plate (55) comes to rest on the top end of the main head (10), the downward thrust exerted on the rod (9) is transferred to both the main head (10) and the elongated member (53), so that the main head (10) and the elongated member (53) sink together into the ground (2).

183.) (New) A method as claimed in Claim 119, wherein the main head (10) is fixed to the rod (9) by means of a connecting mechanism allowing the main head (10) to slide with respect to the rod (9).

184.) (New) A method as claimed in Claim 183, wherein the connecting mechanism is remote-controlled by an actuator.

185.) (New) A method as claimed in Claim 184, wherein the connecting mechanism releases slide of the main head (10) with respect to the rod (9), when the force exerted on the main head (10) exceeds a given threshold value.

186.) (New) A method as claimed in Claim 119, wherein the rod (9) of the pile (3) differs in thickness and/or shape along the longitudinal axis of the pile (3); the rod (9) is made of metal, and comprises a number of segments, which are driven successively through the respective hole (4) and are joined to one another to define the rod (9); the component segments of the rod (9) differ in shape and/or thickness.

187.) (New) A method as claimed in Claim 119, wherein the pile (3) comprises a jacket of cement material (31) surrounding the rod (9); the transverse dimension of the jacket of cement material (31) of the pile (3) differs along the longitudinal axis of the pile (3).

188.) (New) A method as claimed in Claim 187, wherein the difference in the transverse dimension of the jacket of cement material (31) is achieved by adjusting the

transverse dimension of the main head (10) as the main head (10) is driven in.

189.) (New) A method as claimed in Claim 188, wherein the difference in the transverse dimension of the jacket of cement material (31) is achieved by differentially injecting the cement material (31) through at least one through hole (52) formed along the rod (9).

190.) (New) A method as claimed in Claim 119, and comprising the steps of driving at least one auxiliary pile into the ground (2) when building the foundation structure (1); and removing the auxiliary pile once the foundation structure (1) is completed by statically subjecting the auxiliary pile to pull generated by an extracting device connected mechanically at one end to a top end of the auxiliary pile, and resting at the other end on the foundation structure (1), which acts as a reaction member.